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BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA VA 22313-1404

EXAMINER	
WYROZEBSKI LEE,K	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/462,381	Applicant(s) DI SILVESTRO ET AL.	
	Examiner Katarzyna I Wyrozebski-Lee	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) 1-14 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) 1-5 and 7-14 is/are rejected.

7)☐ Claim(s) 6 is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, term "possibly" renders claim indefinite, since it is not clear if the aromatic radical of the present invention actually several aromatic rings or heteroatoms within the ring or if there are unsaturated groups (last line).

Term "substituted" also renders claim indefinite, since it is not clear as to what the radical of the present invention is substituted with.

With respect to claim 9, utilizing term "leading to…" renders claim indefinite, since it is not clear if the linear polyamide is actually formed before the multifunctional monomer is added.

With respect to claim 3, removing narrower range in the preliminary amendment resulted in ",." at the end of the sentence, where comma should be removed.

With respect to claim3, when calculating the ratios, the units usually cancel out. The applicant is asked to provide explanation for the presence of the "%".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Aharoni (U.S. 5,480,944).

It is noted that claims 1-14 are in process-by –product format. According *to In re Thorpe*, 777 F.2d 695, 698 227 USPQ 964, 966 (Fed. Cir. 1985), in such claims determination of patentability is based on the product itself and not on its methods of production, absent showing of criticality of the process steps (See MPEP 2113).

The disclosure of the prior art of Aharoni discloses a composition comprising blends of polymers wherein one of the polymers disclosed is branched fractal polymer. Going straight to the examples disclosed in the prior art of Aharoni the following can be concluded. In the example II of the prior art of Aharoni, the monomers utilized include 1,3,5-benzene tricarboxylic acid, pyridine, 5-aminoisophthalic acid and 4-aminobenzoic acid (col. 14, lines 55-67). The monomers are representatives of the monomers disclosed in general form in the specification of the prior art. The pyridine is a heteroatom, the 5-aminoisophthalic acid contains two carboxylic acid groups (B) and amine group (A) and 4-aminobenzoic acid contains one carboxylic acid group and one amino group. The middle of the compound, group R, in two latter cases is a substituted aromatic ring. Therefore especially the two latter compounds satisfy the requirement

of claim 1, 2, 4, 5 and 9 of the present invention, since monofunctional component in the invention at hand is an optional component known also as a chain stopping agents.

The ratios of the monomers utilized in the prior art of Ahari is not specifically disclosed, however; going back to the same example 2, a molar ratios of the monomers are given. In that particular example the sum of the multifunctional monomers is 0.1 mol and the difunctional monomers is 0.1. Therefore, the ratio of the monomers is 0.1/0.1 = 1, which is also within the limits of the present invention. In fact the in the disclosure of Ahari, this ratio is kept approximately 1 in all the examples. Therefore, the requirement of claim 3 of the present invention is satisfied.

The fractal polymer of the prior art of Aharoni can be formed utilizing additional extension monomers such as aminoaryl acids, arylene diacids, arylene diamines and the lime (col. 11, lines 52-60). The extension monomers of the prior art of Aharoni are optional just like in the invention at hand and their chemical formula contains two similar substituents such as AA and BB on the aromatic rings.

The same example II also discloses, that the monomers are subjected to the condensation reaction and such reaction is phosphite type compounds, which are listed in more detail in col. 10, lines 55-67) and further satisfy the requirements of claim 10 of the present invention.

Since the monomers of the prior art of Ahari as well as their ratios satisfy the requirements of claims of the present invention, properties such as melt flow index and molecular mass will become inherent properties absent unexpected results and therefore the requirements of claims 7 and 8 are satisfied.

In the light of the above disclosure, Ahari anticipates the requirement of claims 1-5 and 7-9 of the present invention

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-5, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aharoni (U.S. 5,480,944) in view of Fisch (U.S. 5,760,163).

It is noted that claims 1-14 are in process-by –product format. According *to In re Thorpe*, 777 F.2d 695, 698 227 USPQ 964, 966 (Fed. Cir. 1985), in such claims determination of patentability is based on the product itself and not on its methods of production, absent showing of criticality of the process steps (See MPEP 2113).

The disclosure of the prior art of Aharoni discloses a composition comprising blends of polymers wherein one of the polymers disclosed is branched fractal polymer. Going straight to the examples disclosed in the prior art of Aharoni the following can be concluded. In the example II of the prior art of Aharoni, the monomers utilized include 1,3,5-benzene tricarboxylic acid, pyridine, 5-aminoisophthalic acid and 4-aminobenzoic acid (col. 14, lines 55-67). The monomers are representatives of the monomers disclosed in general form in the specification of the prior art. The pyridine is a heteroatom, the 5-aminoisophthalic acid contains two carboxylic acid groups (B) and amine group (A) and 4-aminobenzoic acid contains one carboxylic acid group and one amino group. The middle of the compound, group R, in two latter cases is a substituted aromatic ring. Therefore especially the two latter compounds satisfy the requirement of claim 1, 2, 4, 5 and 9 of the present invention, since monofunctional component in the invention at hand is an optional component known also as a chain stopping agents.

The ratios of the monomers utilized in the prior art of Ahari is not specifically disclosed, however; going back to the same example 2, a molar ratios of the monomers are given. In that particular example the sum of the multifunctional monomers is 0.1 mol and the difunctional monomers is 0.1. Therefore, the ratio of the monomers is 0.1/0.1 = 1, which is also within the limits of the present invention. In fact the in the disclosure of Ahari, this ratio is kept approximately 1 in all the examples. Therefore, the requirement of claim 3 of the present invention is satisfied.

The fractal polymer of the prior art of Aharoni can be formed utilizing additional extension monomers such as aminoaryl acids, arylene diacids, arylene diamines and the lime (col. 11, lines 52-60). The extension monomers of the prior art of Aharoni are optional just like in the invention at hand and their chemical formula contains two similar substituents such as AA and BB on the aromatic rings.

The same example II also discloses, that the monomers are subjected to the condensation reaction and such reaction is phosphite type compounds, which are listed in more detail in col. 10, lines 55-67) and further satisfy the requirements of claim 10 of the present invention.

Since the monomers of the prior art of Ahari as well as their ratios satisfy the requirements of claims of the present invention, properties such as melt flow index and molecular mass will become inherent properties absent unexpected results and therefore the requirements of claims 7 and 8 are satisfied.

The difference between the present invention and the prior art of Aharoni is showing of different process in which the branched polyamides can be polymerized.

With respect to the above difference, Fish discloses a process for preparation of branched polyamides. The process in general overview discloses steps of utilizing polyamide prepolymer, which is then combined with compound multifunctional carboxylic groups and other additives (see Abstract).

The polyamides used in the formation of the prepolymer (component A) are thermoplastic polyamides, prepared by the condensation of equimolar amounts of saturated dicarboxylic acid. The monomers for the polyamide prepolymer include linear diamids and aromatic dicarboxylic acids, listed in greater detail in (col. 2, lines 7-34). The prepolymer is formed at temperature in a range of 250°C to 300°C (col. 2, lines 44-46) at short residence time, which prevents formation of triamines (col. 2, lines 52-53).

The second component in the process of Fisch is multifunctional carboxylic acid compound, which is utilized as a branching compound (col. 4, lines 19-21) where the number of carboxylic acid groups ranges from 3 to 10. The carboxylic acids have aromatic or heterocyclic nuclei and include as preferred embodiment 1,2,4,5-benzene tetracarboxylic acid. Other acids are listed in col. 4, lines 26-42. The acid is utilized in the amount of 0.5-5%and it is incorporated into the polyamide prepolymer. Although the prior art of Fisch does not disclose any other monomers present during the branching reaction, such compounds are inherent and necessary to form a polyamide.

The polyamide of the prior art of Fisch was also tested for melt flow index (MFI) at 265°C and load of 3.8 kg or 3800 g (col. 6, lines 52-53). Although the result of the MFI measurements in the prior art of Fisch is reported is in ml, it is examiner's position, that these values will overlap absent showing of the comparative data.

The polyamides of Fisch are further utilized with additives and fillers such as processing aids, which include stabilizers, oxidation inhibitors, UV stabilizers, mold release agents, colorants, plasticizers and the like (col. 4, lines 45-53) in the amount of no more than 50% by weight. In addition one can utilize organic dyes and pigments (col. 4, lines 66-67). The fillers include fibers, silicates, clays and the like (col. 5, lines 1-19). The above disclosure of the prior art of Fisch further satisfies the requirement of claims 10-14 of the present invention.

The branched polyamide of Fisch is utilized with other additives to form compositions having better flow behavior, where the polymers have high molecular weight and they retain the crystallinity. Compositions such as these have good mechanical properties and good stiffness.

In the light of the above disclosure, it would have been obvious to one with the ordinary skill in the art at the time of the instant invention to utilize known process of Fish with the monomers of Ahari to obtain branched polymer of the claimed.

Allowable Subject Matter

9. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna I Wyrozebski-Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

KIWL
April 3, 2001

EDWARD J. CAIN
PRIMARY EXAMINER
GROUP 1500